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(54) Scaffolding fastening; tamper proof nuts

(57) For use in association with scaffolding fastenings, there is proposed a tamper-proof lock means consisting of a nut (14) for engagement with a clamping screw (11), the nut (14) having a non-standard driving recess (15) at one end, and carrying a freely-rotatable captive sleeve (16) which extends beyond the inner end of the nut (14) to form a shroud (21) for enclosing or covering an adjacent nut (12) to make the latter inaccessible. The sleeve (16) is captive by virtue of a stepped or shouldered configuration (19, 20); and the sleeve is also provided with a retaining screw (17) of which the inner end is received within an annular recess (18). The screw (17) serves to hold the relatively rotatable components together particularly when not in use. The lock means greatly reduces the ease with which unauthorised persons can interfere with scaffolding fastenings.

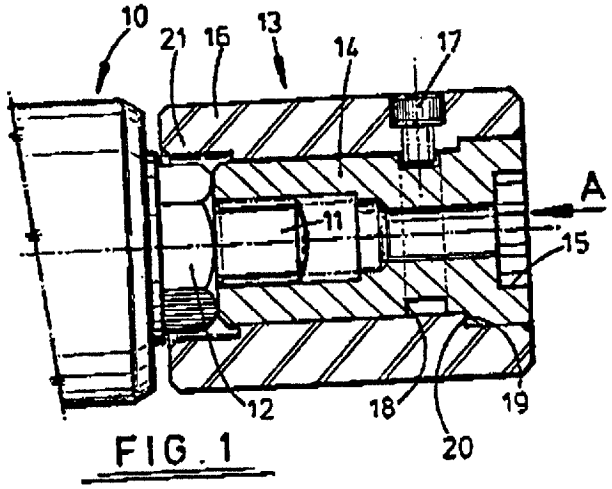

FIG. 1

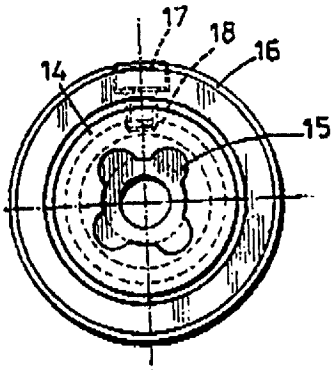

FIG. 2

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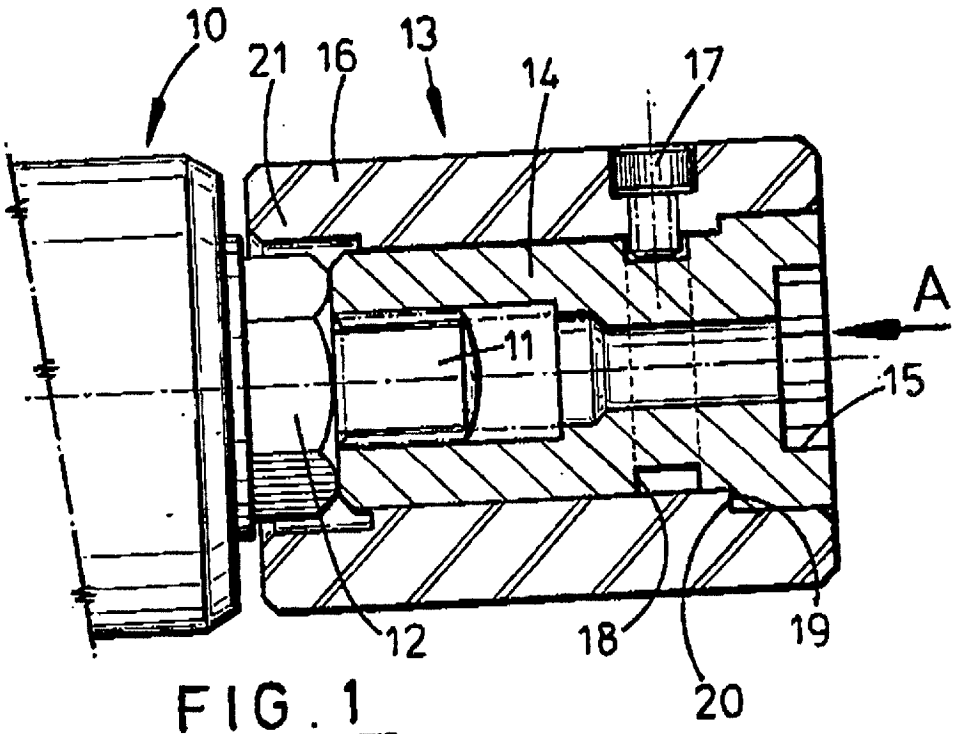

FIG. 1

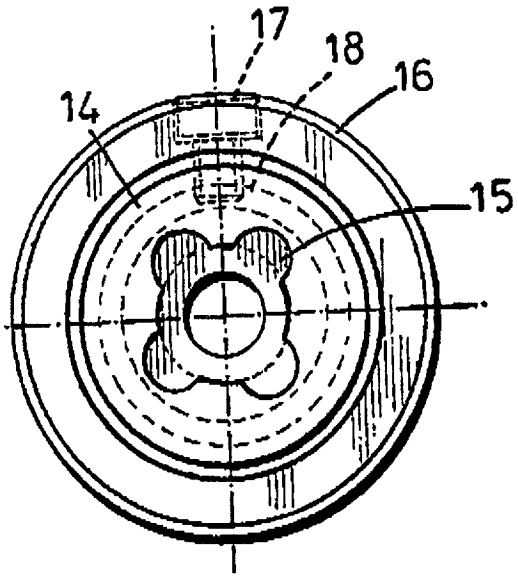

FIG. 2

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SCAFFOLDING

This invention relates to scaffolding.

Traditionally, scaffolding is erected and fixed by appropriately skilled and/or qualified erectors, whereafter the scaffolding is used by different persons attending the structure to which the scaffolding is fixed.

Scaffolding invariably includes tie members upon which the security and stability of the scaffolding depend; and, in common with the scaffolding members generally, the tie members are fixed by means of fastenings comprising ordinary screws and nuts (ie. screw-threaded elements).

A serious and persistent problem associated with scaffolding is that the persons attending the said structure can easily loosen the fastenings. Thus, if one or more of the scaffolding members obstructs some aspect of the work, then said persons may remove the offending scaffolding member or members. Should such removed member happen to be a tie member, then the security and stability of the scaffolding may be impaired with possibly catastrophic results.

According to one aspect of the present invention, scaffolding members are fixed by means of fastenings comprising screws and tamper-proof nuts.

In this description, the term "tamper-proof" means

designed to non-standard specification for the purpose of reducing operability by unauthorised persons.

According to another aspect of the present invention, scaffolding members are fixed by means of fastenings comprising standard screws and nuts, and lock means placed on or against the standard nuts.

According to a further aspect of the present invention, there is provided a lock means for engagement with a screw, comprising a nut having a driving formation at one end, and a captive sleeve freely rotatable on the nut.

An embodiment of the present invention will now be described, by way of example, with reference to the accompanying drawings in which:-

Fig. 1 is a sectional elevation showing part of a scaffolding fastening engaged by a lock means in accordance with the present invention; and

Fig. 2 is a view on arrow A in Fig. 1.

In the drawings a scaffolding member (not shown) is fixed by means of a fastening part of which is indicated by reference numeral 10 and which comprises an ordinary screw 11 and nut 12. During erection of the scaffolding, the fastening 10 is tightened using a conventional spanner applied to the nut 12.

In order to limit unauthorised loosening of the nut 12, a lock means generally indicated by reference

numeral 13 is applied to the fastening 10 by screwing onto the screw 11 until the lock means tightly engages the nut 12.

The lock means 13 consists of a nut 14 threaded for engagement with the screw 11 at one end, and at the other end provided with a tamper-proof driving recess 15 in the form of an asymmetrically scalloped recess as shown in Fig. 2. A spanner (not shown) for fitting the driving recess 15 is provided for use by authorised persons.

The nut 14 carries a captive sleeve 16 which is freely rotatable on the nut 14. The captive sleeve 16 is conveniently retained on the nut 14 by means of a retaining screw 17 an inner projecting portion of which is freely received in an annular groove 18 formed in the nut 14. However, the principal capture of the sleeve 16 is by virtue of a shoulder 19 on the nut 14 engaging a step 20 in the bore of the sleeve 16 so that when the nut 14 is screwed into engagement with the nut 12, the sleeve 16 cannot be removed even if the retaining screw 17 is withdrawn. The freely rotatable sleeve 16 prevents removal of the nut 14 by gripping the exterior thereof with a tool such as a pipe wrench. Also, the provision of a shroud portion 21 on the sleeve 16 encloses or covers the nut 12 to prevent access thereto when the locking means 13 is applied.

Modifications of the arrangement described above, within the scope of the appended claims, include reduction and/or removal of the shroud portion 21 and use of the nut 14 as the sole means of fixing the fastening 10. Also, the retaining screw 17 may be substituted by a spring-loaded retaining ball; or may be dispensed with. Also, the driving recess 15 may be substituted by a driving formation of male instead of female form; and either form may be of regular configuration.

CLAIMS

1. Scaffolding members fixed by means of fastenings comprising screws and tamper-proof (as hereinbefore defined) nuts.

2. Scaffolding members fixed by means of fastenings comprising standard screws and nuts, and lock means placed on or against the standard nuts.

3. Lock means for engagement with a screw, comprising a nut having a driving formation at one end, and a captive sleeve freely rotatable on the nut.

4. Lock means as claimed in claim 3, wherein the driving formation is of non-standard configuration.

5. Lock means as claimed in claim 3 or 4, wherein the driving formation is a driving recess.

6. Lock means as claimed in any one of claims 3 to 5, wherein the sleeve extends beyond that end of the nut opposite the driving formation to define a shroud for enclosing an adjacent second nut.

7. Lock means as claimed in any one of claims 3 to 6, wherein the outer surface of the nut defines a stepped or shouldered configuration.

8. Lock means substantially as hereinbefore described with reference to and as shown in the accompanying drawings.

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